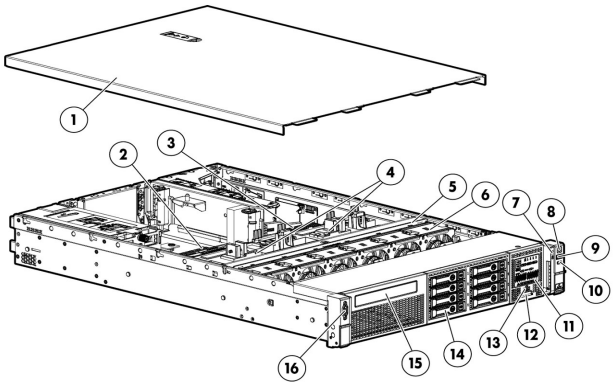
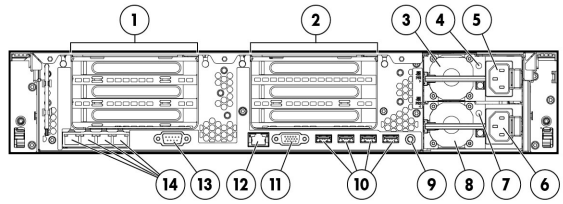
Overview

With enhanced innovations in performance, feature flexibility, and management capabilities, the DL385p Gen8 is the price/performance choice for your virtualization, database, and high performance computing workloads.





Front View:

1. Quick removal access panel
2. Second AMD Processor
3. First AMD Processor
4. (24) DDR3 DIMM slots
5. Air Baffle
6. Hot-plug fans, full N+1 redundancy
7. Health LED
8. Power On/Standby button & system power LED button
9. USB connector
10. UID LED
11. Systems Insight Display
12. Asset Tag
13. USB connector
14. 8 SFF HDD Bays
15. Optional Slim Optical Bay
16. Video connector

Rear View:

1. PCIe Slots (Slots 1-3 top to bottom)
2. PCIe Slots (Slots 4-6 top to bottom)
3. Power supply 1
4. Power supply 1 Power LED
5. Power supply 1 Power connection
6. Power supply 2 Power connection
7. Power supply 2 Power LED
8. Power supply 2
9. UID LED
10. USB connectors (4)
11. Video connector
12. iLO connector
13. Serial connector
14. FlexibleLOM ports (Shown: 4 ports 1Gb each-Port 1-4 starting Right to Left)

What's New

- Updating supported options.

Standard Features

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor One of the following depending on Model	**Sixteen-Core Processors** AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W TDP) Processor AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W TDP) Processor AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W TDP) Processor AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W TDP) Processor AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W TDP) Processor AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W TDP) Processor **Twelve-Core Processors** AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W TDP) Processor AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W TDP) Processor AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W TDP) Processor AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W TDP) Processor **Eight-Core Processors** AMD Opteron™ 6328(3.2GHz/8-core/16MB/115W TDP) Processor AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W TDP) Processor AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W TDP) Processor AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor **Quad-Core Processors** AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W TDP) Processor AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W TDP) Processor **NOTE:** Mixing different processor models is not supported. **NOTE:** All processors support up to 1600MHz DDR3 memory speeds.
Cache Memory	16MB (2x8MB) Level 3
Chipset	AMD SR5690 Northbridge and SP5100 Southbridge

Standard Features

Upgradeability	Upgradeable to 2 processors Up to 24 DIMM slots available for higher memory capacities FlexibleLOM connector for 1Gb or 10Gb networking options 8SFF (plus optional upgrade of 8SFF for up to 16SFF drives-requires second Smart Array) and other Models with 8LFF, 12LFF, or 25SFF hard drive bays Optional 3-slot PCIe 2.0 riser (x16, x8, x8) **NOTE:** The second processor must be installed to take advantage of the optional 3-slot riser. Redundant Power Supply Optical Drive (available on 8SFF and 8LFF Models only)
On System Management Chipset	HP iLO (Firmware: HP iLO 4) **NOTE:** For more information, visit: http://www.hp.com/go/ilo
Memory Protection	Advanced ECC Online Spare

Memory
One of the following depending on Model

Type	HP SmartMemory DDR3 Load Reduced (LRDIMM) and Registered (RDIMM)
DIMM Slots Available	24 (12 DIMM slots per processor/4 channels per processor/3 DIMMs per channel)
Storage Centric Model	16GB (2x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Dedicated Workload Model	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Maximized Consolidation Model	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS
Maximum Capacity (LDIMM)	768GB (24 x 32GB LRDIMM @ 800MHz)
Maximum Capacity (RDIMM)	128GB (8 slots x 16GB RDIMM @1600MHz) **NOTE:** Requires 2nd processor installed

NOTE: HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.
NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html
NOTE: If only one processor is installed, only half the DIMM slots are available.
NOTE: Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Standard Features

Network Controller
One of the following depending on Model

HP ProLiant Gen8 servers offer a new networking technology - FlexibleLOM. The HP ProLiant DL385p Gen8 server offers the customer the choice of 1 Gigabit and/or 10 Gigabit networking solutions. For additional details see the Networking Section of this document. Only one FlexibleLOM may fit on a single server - see PCIe solutions for additional networking.

HP Ethernet 1Gb 4-port 331FLR Adapter

Expansion Slots

PCIe Riser #1
(Standard)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
1	PCIe 2.0	X8	X16	5	Full Length, Full Height Slot	For Processor 1
2	PCIe 2.0	X8	X8	8	Half Length, Full Height Slot	For Processor 1
3	PCIe 2.0	X4	X8	11	Half Length, Full Height Slot	For Processor 1

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number
** Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating the second optional riser slot, the second processor must be installed.

PCIe Riser #2
(Optional - Requires 2nd Processor)

Expansion Slots #	Technology	Bus Width**	Connector Width	Bus Number*	Form Factor	Notes
4	PCIe 2.0	X16	X16	65	Full length, full height slot	For Processor 2
5	PCIe 2.0	X8	X16	68	Half length, full height slot	For Processor 2
6	PCIe 2.0	X8	X8	71	Half length, full height slot	For Processor 2

* Default bus assignment (in decimal). Inserting cards with PCI bridges may alter the actual bus assignment number.
** Indicates the number of physical electrical lanes running to the connector.
NOTE: When populating the second optional riser slot, the second processor must be installed.

Standard Features

HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU).

NOTE: For further information, please refer to HP's RBSU (ROM based setup utility) user guide: www.hp.com/support/rbsu.

Storage Controller
One of the following depending on Model

Entry Model	HP Smart Array P420i/ZM (RAID 0/1)
Storage Centric Model	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)
Dedicated Workload Model	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)
Maximized Consolidation Model	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)

Internal Storage Devices

Diskette Drive	None	
Optical Drive	Optional: DVD-ROM, DVD-RW **NOTE:** Not Available on 8+8 LFF, 12LFF or 25SFF Models.	
Hard Drives	None ship standard	
Drive Bays One of the following depending on Model	Entry Model	8-SFF drive bays(additional 8-SFF option)
	Storage Centric Model	12-LFF drive bays
	Dedicated Workload Model	8-SFF drive bays total with options for DVD OR optional second 8-SFF drive bay set (total of 16SFF drive bays, no DVD) **NOTE:** Optional 2nd 8-SFF drive kit requires 2nd Smart Array Controller (PCIe) for support recommend HP Smart Array P420 PCI card).
	Maximized Consolidation Model	25-SFF drive bays total

NOTE: For best performance on the 25 Small Form Factor drive cage where less than 25 drives are installed you will need to balance the drives on the

Standard Features

backplane's two expanders. Drive bays 1-12 are on routed to expander 1 and drive bays 13-25 are routed to expander number 2. Example: if a customer purchases 16 drives, they should split 8 drives on expander 1 and 8 drives on expander 2 for optimal performance.
NOTE: HP ProLiant DL385p series servers offer both LFF and SFF versions. The optical drive bay is not available with +8SFF drive bay upgrade, 12-LFF, or 25-SFF drive bay models.
NOTE: 8-LFF, 12-LFF, and 25-SFF versions are not upgradeable options from the standard 8SFF model, or vice versa.
NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit. These part numbers for single HDD blanks below are also provided should the customer require replacement HDD blanks for their server.
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

Maximum Internal Storage	Hot Plug SFF SAS	30.0TB	25 x 1.2TB (on 25 SFF Drive Bay Models)
	Hot Plug SFF SATA	25.0TB	25 x 1.0TB (on 25 SFF Drive Bay Models)
	Hot Plug LFF SAS	48.0TB	12 x 4TB (on 12 LFF Drive Bay Models)
	Hot Plug LFF SATA	48.0TB	12 x 4TB (on 12 LFF Drive Bay Models)
	Hot Plug SFF SAS SSD	20.0TB	25 x 800GB (on 25 SFF Drive Bay Models)
	Hot Plug LFF SATA SSD	10.0TB	12 x 800GB (on 12 LFF Drive Bay Models)
	NOTE: Storage capacities may vary depending on Models/Drive Cages and Hard Drives selected.		

Interfaces	Serial	1 (Back)
	Video	2 (1 front, 1 back) not active simultaneously
	FlexibleLOM Network Ports	All pre-configured models come standard with 4 x 1GB ports (See HP Networking section below for more details and options)
	HP iLO Remote Management Network Port	1 Gb Dedicated
	SD Slot	1 Internal Secure
	USB 2.0 Ports	Up to 8 total: up to 2 front, 4 back, 2 internal

Industry Standard Compliance	ACPI 2.0b Compliant PCIe 2.0 Compliant PXE Support WOL Support Microsoft® Logo certifications USB 2.0 Compliant

Standard Features

Server Power Cords

All Pre-configured Models servers ship with a high voltage server to PDU power cord.
NOTE: HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cord that connects to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to power distribution units (PDUs) in data center racks and now ship standard with a PDU 6-foot C-14 to C13 power cord (A0K02A). If a user wishes to power a ProLiant DL server using a 110V receptacle (NEMA-15), the 6-foot NEMA 5-15 to C13 power cord must be ordered separately (AF556A). See Power Cords section for Worldwide Power Cord options.

Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_div/14209_div.html

Common Slot Power Supply

NOTE: Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to www.hp.com/go/ipd.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: www.hp.com/go/hppoweradvisor.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Standard Features

System Fans One of the following depending on Model	2P Models have (6) (N+1 redundancy standard) 1P Models have (4) (N+1 redundancy standard)
Required Cabling	For required cabling information, refer to the HP Web site at: www.hp.com/servers/dl385p-gen8
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer **NOTE:** For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server, please visit our Support Matrix at: http://www.hp.com/go/ossupport and our driver download page: http://www.hp.com/support/DL385pGen8
Graphics	Integrated Matrox G200 video standard • 1280 x 1024 (32 bpp) • 1920 x 1200 (16 bpp) HP iLO 4 On System Management Memory • 16 MB Flash • 256 MB DDR 3 with ECC (112 MB after ECC and video)
Form Factor One of the following depending on Model	2U Rack form factor **NOTE:** All pre-configured BTO Models ship with Ball-Bearing sliding rails and cable management arm. Any customer configured models through HP CTO must select the appropriate Rail Kit when configuring. 8 SFF Drive Bay Version: 3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length 8 LFF Drive Bay Version: 3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length 12 LFF Drive Bay Version: 3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 29.5" (74.94cm) Length 25 SFF Drive Bay Version: 3.44 (8.74 cm) Height x 17.54" (44.55 cm) Width x 27.5" (69.85 cm) Length

Standard Features

On System Management	HP iLO Management Engine	HP iLO Management Engine is a comprehensive set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 servers. The HP iLO Management Engine portfolio includes:
		• **HP iLO:** The HP iLO (Integrated Lights-Out) management processor is the core foundation for the HP iLO Management Engine
		• **HP Agentless Management:** Provides built in server health monitoring and alerting capability without OS agents, that starts working the moment a power cord and an Ethernet cable are connected.
		• **HP Active Health System:** Always on, continuous monitoring for increased stability and shorter downtimes; 100% configuration history; Health and service alerts and easy export and upload to Service and Support.
		• **HP Intelligent Provisioning:** Lets customers provision and configure a single server without any separate media. No more SmartStart CDs or Smart Update Firmware DVD are needed.
		  ○ To start Intelligent Provisioning:
		  ▪ Press the F10 key during the ProLiant Gen8 server boot process (also known as power on self test or POST).
		  ▪ Please go to the Intelligent Provisioning website at www.hp.com/go/intelligentprovisioning for additional information and to view usage videos.
		  ▪ Use the Service Pack for ProLiant (SPP) at www.hp.com/go/spp to get firmware and software updates.
		• HP iLO Mobile App: Enables the ability to access, deploy, and manage your server anytime from anywhere from select smartphones and mobile devices. For additional information please visit: www.hp.com/go/ilo/mobileapp
		NOTE: For more information, visit: http://www.hp.com/go/ilo or HP iLO Management Engine technologies whitepaper

Standard Features

HP Insight management	HP Service Pack for ProLiant	HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) provide a comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling firmware to be updated online and integrating firmware and system software updates in one operation, HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support for each Service Pack for ProLiant release. The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application provides a straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline. The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdepencies, when determining the correct updates and order of update deployment. **NOTE:** The Service Pack for ProLiant (which includes HP SUM) can be downloaded from www.hp.com/go/spp/download. More information can be found: http://www.hp.com/go/SmartUpdate, www.hp.com/go/spp and http://www.hp.com/go/hpsum
Security	Power-on password Serial interface control Administrator's password	

Standard Features

Warranty

This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at:
http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. HP InsightControl also supports Location and Power Discovery Services to automate many configuration, asset tracking, and power management tasks to speed implementation and prevent downtime. For more information, see http://www.hp.com/go/insightcontrol. HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, see: http://www.hp.com/services/insight.
	HP iLO Advanced	HP Integrated Lights-Out Advanced License a product option, providing smart remote server management without compromise. iLO Advanced unlocks the full set of remote administration functionality for all HP ProLiant servers by activating the full Virtual Keyboard Video and Mouse remote console, multi-user collaboration, console record and replay, GUI-based and scripted virtual media and virtual folders, and enhanced security and power management functionality. For more information, see: http://www.hp.com/go/iloadvance
	HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). **NOTE:** For more information, visit: http://www.hp.com/go/matrixoe
High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html

Optional Features

HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu

Storage Software

Whether you need to solve a specific data protection, archiving, or storage command and control challenge, or deliver on strategic consolidation, compliance, or continuity initiatives, look no further than HP storage software. Our storage software helps you reduce costs, simplify storage infrastructure, protect vital assets and respond faster to business opportunities.

Storage software that gets the job done:

- **Data Protection and Recovery Software**
  Whether you're a large enterprise or a smaller business, HP data protection and recovery software will cost-effectively protect you against disaster and ensure business continuity.
- **Data Archive and Migration Software**
  HP's storage software enables you to comply with data retention and retrieval requirements, improve application performance, and reduce costs by efficiently migrating infrequently accessed or less valuable data to lower cost storage.
- **Storage Resource Management Software (SRM)**
  HP's storage resource management software reduces operational costs and provides the command and control foundation you need to efficiently manage and visualize your physical and virtual environments.
- **Data Replication Software**
  HP offers array-based and host-based replication software for use in disaster recovery, testing, application development and reporting.
- **Storage Device Management Software**
  Maximize your investment in HP storage and networking with software that enables hardware-specific configuration, performance tuning and connectivity management.
- **HP StoreVirtual VSA**
  With HP StoreVirtual VSA you can use the power of virtualization to turn a set of heterogeneous and disconnected physical disk drives in your servers and storage devices into a single pool of logical storage capacity.

NOTE: For more information available Storage Software including QuickSpecs, please see: www.hp.com/go/storage/software.

HP Insight Online

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. www.hp.com/go/insightonline

Optional Features

HP Proactive Insight experience	Prevent problems with innovative, automated monitoring tools and proactive services. The HP Proactive Insight experience consist of using Insight Online, Insight Remote Support, and Proactive Care Support Service as one integrated solution. The Proactive Insight experience provides you with expert advice and personalized, cloud-based automated IT support, helping to prevent unplanned down time and solve problems quickly. For more information, visit: www.hp.com/go/proactiveinsightexperience
Factory Express Portfolio for Servers and Storage	HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed. Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, EVA7xxx, EVA, XP, rackable tape libraries and configurable network switches. For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.
HP Simple Configurator	SCE is a guided self service tool to help sales and non technical people provide customers with initial configurations in 3 to 5 minutes. You may then send the configuration on for configuration help, or use in your existing ordering processes. If you require "custom" rack configuration or configuration for products not available in SCE, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator

Service and Support

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for their business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help deliver high levels of application availability through proactive service management and advanced technical response

You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs.

HP Technology Services meets business challenges with services offered in three support recommendations - **Optimized Care, Standard Care, and Basic Care** - available for each product group. Such support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software designed to meet your specific needs.

All three service recommendations include support services from the broader portfolio of Foundation Care and Proactive Care services.

Optimized Care

Optimized Care : Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

HP Installation and Startup for Insight Control Software / HP SIM
Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Proactive Care
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your call and end to end until resolved, delivering a single point of contact for you. Helping you to resolve your hardware and software issues and minimizing downtime in your business critical environment.

Additional Services: Factory Express, Education Services, Proactive Select - 30 Credit Package

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Service and Support

Standard Care

Standard Care : Service recommendation that maintains high level of server availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

HP Installation and Startup for Insight Control Software / HP SIM
Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Collaborative Support
Provides problem resolution support across the stack of HW, firmware, and HP and 3rd party SW. In case the issue is with 3rd party SW, HP does known issue resolution. If HP cannot solve the issue, it will contact the third-party vendor and create a problem incident on your behalf.
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-8232ENW.pdf

Additional Services: Software support service with 24X7 availability with a 2 hour response, Training courses on Microsoft, Linux (Red Hat and SUSE), VMware, and HP Insight Software, 10 Proactive Select Credit package, Factory Express
http://www8.hp.com/us/en/business-services/it-services.html?compURI=1078865

Basic Care

Basic Care: delivers minimum recommended support service level

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service
Provides you with rapid remote support and if required an HP authorized technical engineer will be on site 24X7 begin hardware maintenance service within 4 hours of the service request being logged
http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf

3-Year , HP 24x7 Software Support for Insight Control
Provides remote 3-year software support service that delivers comprehensive software services, including access to HP technical resources and software updates
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-6645EEE.pdf

Additional Services: Factory Express, Education Services, Proactive Select - 10 Credits

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Insight Remote Support

Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more
http://www.hp.com/go/insightremotesupport

Service and Support

HP Support Center

Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc

HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.
HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.

*HP' Support Center Mobile App is subject to local availability

Warranty / Service Coverage

For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.

The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.

For more information

To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.
NOTE: All Pre-configured Models come populated with some hard drive blanks installed. Should the customer need additional hard drive blanks, they can order more using either P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit or P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit.
NOTE: Not all models are available in all regions. Check with your local country HP offices for availability.

Entry Model

HP ProLiant DL385p Gen8 6320 1P 4GB-R P420i/ZM Hot Plug 8 SFF 460W PS Server
710723-001

Processor(s)	(1) AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W TDP) Processor
Cache Memory	16MB (2x8MB) Level 3
Memory	4GB (1x4GB) PC3-10600R (DDR3-1333) Registered DIMMS **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed (12 DIMM Slots per processor).
Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
Storage Controller	HP Smart Array P420i/ZM (RAID 0/1)
Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives(P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit available for additional blanks)
Internal Storage	8SFF SAS/SATA/SSD HDD Bays
Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW/ROM Optical Drive)
PCI-Express Slots	3 PCIe slots **NOTE:** 3 additional PCIe slots available with optional PCIe Riser Cage #2- requires second processor.
Power Supply	(1) HP 460W CS Gold Hot Plug Power Supply (92% Efficient)
Fans	(4) (N+1 redundancy standard)
Management	HP iLO Management Engine (standard) Optional: HP iLO Advanced or HP Insight Control
Form Factor	Rack (2U), HP Friction Rail Kit Standard/ No Cable Management Arm included **NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

Storage Centric Models

HP ProLiant DL385p Gen8 6320 1P 16GB-R P420i/512 Hot Plug 12 LFF 750W PS Server 703930-001	**Processor(s)**	(1) AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	16GB (2x8GB) PC3-10600R (DDR3-1333) Registered DIMMS **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed (12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)
	Hard Drive	None ship standard; drive cage includes 10 LFF hard drive blanks, 2 open drive bays for drives(P/N 666986-B21: HP LFF Gen8 Hard Drive Blank Kit available for additional blanks)
	Internal Storage	12 LFF SAS/SATA HDD Bays
	Optical Drive Bay	None available
	PCI-Express Slots	3 PCIe slots **NOTE:** 3 additional PCIe slots available with optional PCIe Riser Cage #2- requires second processor.
	Power Supply	(1) HP 750W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Advanced or HP Insight Control
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard **NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

Dedicated Workload Models

NOTE: This Model is Energy Star Certified.

HP ProLiant DL385p Gen8 6344 2P 32GB-R P420i/1GB Hot Plug 8 SFF 2x750W PS Svr 703931-001	**Processor(s)**	(2) AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W TDP) Processors
	Cache Memory	16MB (2x8MB) Level 3
	Memory	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed (12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)
	Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives(P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit available for additional blanks)
	Internal Storage	8 SFF SAS/SATA HDD Bays Optional: +8 SFF (total of 16) SFF SAS/SATA HDD Bays (requires additional PCI controller)
	Optical Drive Bay	Optional Slim Optical Bay (SATA DVD-RW /ROM Optical Drive)
	PCI-Express Slots	6 PCIe slots **NOTE:** Includes PCIe Riser Cage #2.
	Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Advanced or HP Insight Control
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard **NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

Maximized Consolidation Models

NOTE: These Models are Energy Star Certified.

HP ProLiant DL385p Gen8 6376 2P 32GB-R P420i/2GB Hot Plug 25 SFF 2x750W PS Svr 703932-001	**Processor(s)**	(2) AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W TDP) Processors
	Cache Memory	16MB (2x8MB) Level 3
	Memory	32GB (4x8GB) PC3-10600R (DDR3-1333) Registered DIMMS **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/2GB FBWC (RAID 0/1/1+0/5/5+0/6/6+0)
	Hard Drive	None ship standard; includes 23 SFF hard drive blanks, 2 open drive bays for drives (P/N 666987-B21: HP SFF Gen8 Hard Drive Blank Kit available for additional blanks)
	Internal Storage	25 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Available
	PCI-Express Slots	6 PCIe slots **NOTE:** Includes PCIe Riser Cage #2.
	Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard) Optional: HP iLO Advanced or HP Insight Control
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard **NOTE:** The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001). Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Smart Buys

HP ProLiant DL385p Gen8 6212 2.6GHz 8-core 1P 8GB-R Hot Plug SFF 460W PS US Server/S-Buy 704913-S01	**Processor(s)**	AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory. **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 8 SFF hard drive blanks
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Included
	PCI-Express Slots	3 PCIe slots
	Power Supply	HP 460W CS Gold Hot Plug Power Supply
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard)
	Form Factor	Rack (2U), HP 2U Friction Rail Kit
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385p Gen8 6204 3.3GHz 4-core 1P 8GB-R Hot Plug SFF 460W PS US Server/S-Buy 686854-S01	**Processor(s)**	AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Included
	PCI-Express Slots	3 PCIe slots
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard)
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Smart Buys

HP ProLiant DL385p Gen8 6212 2.6GHz 8-core 2P 16GB-R Hot Plug SFF 460W PS US Server/S-Buy 686853-S01	**Processor(s)**	(2) AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	16GB (2x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/512MB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Included
	PCI-Express Slots	6 PCIe slots
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard)
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385p Gen8 6234 2.4GHz 12-core 2P 16GB-R Hot Plug SFF 460W PS IC US Server/S-Buy 686852-S01	**Processor(s)**	(2) AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	16GB (2x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory **NOTE:** Up to 24 DIMM slots available with 2nd Processor installed(12 DIMM Slots per processor).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Included
	PCI-Express Slots	6 PCIe slots
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard); Includes Insight Control License Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Smart Buys

HP ProLiant DL385p Gen8 6348 2.8GHz 12-core 1P 8GB-R Hot Plug 25-SFF 750W RPS US Server/S-Buy 710724-S01	**Processor(s)**	AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 23 SFF hard drive blanks, 2 open drive bays for drives
	Internal Storage	25 SFF SAS/SATA HDD Bays
	Optical Drive Bay	None Available
	PCI-Express Slots	3 PCIe slots
	Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(4) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard);
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL385p Gen8 6376 2.3GHz 16-core 2P 16GB-R Hot Plug 8-SFF 750W RPS US Server/S-Buy 710725-S01	**Processor(s)**	(2) AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W TDP) Processor
	Cache Memory	16MB (2x8MB) Level 3
	Memory	16GB (2x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard; includes 6 SFF hard drive blanks, 2 open drive bays for drives
	Internal Storage	8 SFF SAS/SATA HDD Bays
	Optical Drive Bay	HP 12.7mm Slim SATA DVD-RW JackBlack Optical Drive
	PCI-Express Slots	6 PCIe slots
	Power Supply	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient)
	Fans	(6) (N+1 redundancy standard)
	Management	HP iLO Management Engine (standard);
	Form Factor	Rack (2U), HP Ball Bearing Rail Kit /Cable Management Arm standard
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Configuration Information - Factory Integrated Models

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Factory Integrated Models must start with a CTO Server.
NOTE: FIO indicates that this option is only available as a factory installable option.
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models

HP ProLiant DL385p Gen8 8 SFF Configure-to-order Server 653203-B21

Factory Integrated Model ships with:

Drive Cage - 8-SFF Drive Bays available (See hard drives in Section 4 for options)
SID-Systems Insight Display Included
24 DIMM slots for RDIMM or LRDIMM memory installation
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional PCIe Slots may be added with the 2nd Riser Cage option.

System Fans - 4 standard (2 additional fans included with second processor)
Drive Cage - 8SFF (drive blanks installed dependent on number of drives ordered)
USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot
HP iLO Management Engine (iLO4)
NOTE: Smart Array Cache options, Hard drives, Optical drives, Flexible NICs*, Power Supply* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section. Additional 8-SFF Drive option requires additional HP Smart Array Controller.
* This is a required selection.

HP ProLiant DL385p Gen8 8 LFF Configure-to-order Server 669804-B21

Factory Integrated Model ships with:

Drive Cage - 8-LFF Drive Bays available (See hard drives in Section 4 for options)
Pop Out SID-Systems Insight Display Included
24 DIMM slots for RDIMM or LRDIMM memory installation
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional PCIe Slots may be added with the 2nd Riser Cage option.

System Fans - 4 standard (2 additional fans included with second processor)
Drive Cage - 8LFF (drive blanks installed dependent on number of drives ordered)
USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot
HP iLO Management Engine (iLO4)
NOTE: Smart Array Cache options, Hard drives, Optical drives, Flexible NICs*, Power

Configuration Information - Factory Integrated Models

Supply* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.
* Required selection.

HP ProLiant DL385p Gen8 12 LFF Configure-to-order Server 669805-B21

Factory Integrated Model ships with:

Drive Cage - 12-LFF Drive Bays available (See hard drives in Section 4 for options)
NO SID-Systems Insight Display Included
24 DIMM slots for RDIMM and LRDIMM memory installation
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional PCIe Slots may be added with the 2nd Riser Cage option.

System Fans - 4 standard (2 additional fans included with second processor)
USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot
HP iLO Management Engine (iLO4)
NOTE: Smart Array Cache options, Hard drives, Flexible NICs*, Power Supply* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.
* Required selection.

HP ProLiant DL385p Gen8 25 SFF Configure-to-order Server 669803-B21

Factory Integrated Model ships with:

Drive Cage - 25-SFF Drive Bays available (See hard drives in Section 4 for options)
NO SID-Systems Insight Display Included
24 DIMM slots for RDIMM, LRDIMM, and UDIMM memory installation
1 FlexibleLOM connector (see Step2: HP Flexible NIC section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller w/ Zero Memory (ZM)
I/O slots - 3 Slots come standard:

- Slot 1 - FL/FH x8 PCIe 2.0 (x16 connector)
- Slot 2 - HL/FH x8 PCIe 2.0 (x8 connector)
- Slot 3 - HL/FH x4 PCIe 2.0 (x8 connector)
- Additional Slots may be added via selection from the "PCI Information and Options" subsection

System Fans - 4 standard (2 additional fans included with second processor)
Drive Cage - 12LFF (drive blanks installed dependent on number of drives ordered)
USB - 4 Rear, 2 Front, 2 Internal, 1 SD slot
HP iLO Management Engine (iLO4)
NOTE: Smart Array Cache options, Hard drives, Flexible NICs*, Power Supply* and Rail/CMA Kits not included in the base configuration - choose these from Steps 2 or 4 below in Options section.
* Required selection.

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors	**NOTE:** All processors support up to 1600MHz DDR3 memory speeds.	
	Sixteen-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) FIO Processor Kit	703939-L21
	HP DL385p Gen8 AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) FIO Processor Kit	703941-L21
	HP DL385p Gen8 AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W) FIO Processor Kit	703943-L21
	HP DL385p Gen8 AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) FIO Processor Kit	703946-L21
	HP DL385p Gen8 AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) FIO Processor Kit	703950-L21
	Twelve-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) FIO Processor Kit	703952-L21
	HP DL385p Gen8 AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) FIO Processor Kit	703954-L21
	Eight-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) FIO Processor Kit	703958-L21
	HP DL385p Gen8 AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) FIO Processor Kit	703960-L21
	Quad-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) FIO Processor Kit	703962-L21
HP Memory	**NOTE:** To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html (Worldwide)	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647871-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647877-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647883-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672633-B21
	Load Reduced DIMMs(LRDIMMs)	
	HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21
	Ultra Low Voltage DIMMs (ULVDIMM)	

Configuration Information - Factory Integrated Models

	HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647869-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647875-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647881-B21
	NOTE: HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will. **NOTE:** If only one processor is installed, only half the DIMM slots are available. **NOTE:** Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator. **NOTE:** All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.	
HP Networking	**FlexibleLOM Adapters** **NOTE:** The HP ProLiant DL385p Gen8 server requires one FlexibleLOM to be installed in the FlexibleLOM slot.	
	HP Ethernet 1Gb 4-port 331FLR FIO Adapter	684208-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ FIO Adapter	684210-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ FIO Adapter	684213-B21
	HP Ethernet 1Gb 4-port 366FLR FIO Adapter	684217-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ FIO Adapter	684218-B21
	HP FlexFabric 10Gb 2-port 526FLR-SFP+ FIO Adapter	684219-B21
	HP Ethernet 10Gb 2-port 561FLR-T FIO Adapter	700700-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ FIO Adapter	700752-B21
	HP FlexFabric 10Gb 2-port 533FLR-T FIO Adapter	700760-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	
HP Power Supplies	**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported. **NOTE:** Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits **NOTE:** The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.	
	HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
	HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HP Common Slot Gold Power Supplies **NOTE:** The following Power Supplies offer 92% efficiency.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21

HP Common Slot -48VDC Power Supplies

HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21

NOTE: The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.

NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.

NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords

NOTE: Power Specification and Technical Content for supported power supplies can be found at:
http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Step 3: Choose Additional Factory Integratable Options (only one of the following from each list unless otherwise noted)

HP Rack Kits

NOTE: Rail kits are optional for Gen8 and are no longer included standard with the server (except pre-configured/BTO Models). The customer has the choice to not include rail kits with their server purchase, but it is recommended.
NOTE: HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.
NOTE: Additional HP Rack Kit options can be found in "Step 4: Additional Options, HP Rack Options - Rail Kits" section of this QuickSpecs. Only FIO options are listed here.
NOTE: To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative (p/n 695539-001).
Caution: HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.

HP 2U FIO Friction Rail Kit **NOTE:** No in-rack serviceability.	663476-B21
HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA	663478-B21
HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit with CMA	663480-B21

NOTE: In custom configurations - No Rails can be selected

HP Insight Software

HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	C6N36A
HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle FIO Electronic License	C6N36ABE

NOTE: The Electronic software license is available in EMEA only.

Configuration Information - Factory Integrated Models

Converged Infrastructure Management Software	**HP OneView with iLO Advanced - Server hardware required on same purchase order**	
	HP OneView for ProLiant DL Server incl 3yr 24x7 Supp FIO Bundle Physical 1 Svr Lic	E5Y43A
	HP OneView incl 3yr 24x7 Supp Bundle 1 Svr E-LTU	E5Y43AAE

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options and Additional Options" section below.

Core Options

NOTE: Some options may not be integrated at the factory. Contact your local sales representative for additional information.

HP Unique Options	HP DL380/DL385 Gen8 8 Small Form Factor Hard Drive Backplane Cage Kit **NOTE:** With upgrade of 8SFF Cage/Bkpln, there is no Optical Drive support. **NOTE:** All cables necessary for proper installation of the 8SFF Cage are included with this Kit. **NOTE:** With upgrade of 8SFF Cage/Bkpln, an additional storage controller is required. Please go to the Storage Controller section for options available.	662883-B21
	HP DL385p Gen8 x16 2x8 PCI-E Riser Kit **NOTE:** 2nd Riser Cage requires 2nd Processor.	653214-B21
HP Processors	**Sixteen-Core Processors** **NOTE:** All support up to 1600MHz DDR3 memory speeds	
	HP DL385p Gen8 AMD Opteron™ 6386SE (2.8GHz/16-core/16MB/140W) Processor Kit	703939-B21
	HP DL385p Gen8 AMD Opteron™ 6380 (2.5GHz/16-core/16MB/115W) Processor Kit	703941-B21
	HP DL385p Gen8 AMD Opteron™ 6378 (2.4GHz/16-core/16MB/115W) Processor Kit	703943-B21
	HP DL385p Gen8 AMD Opteron™ 6376 (2.3GHz/16-core/16MB/115W) Processor Kit	703946-B21
	HP DL385p Gen8 AMD Opteron™ 6366HE (1.8GHz/16-core/16MB/85W) Processor Kit	703950-B21
	HP DL385p Gen8 AMD Opteron™ 6284SE (2.7GHz/16-core/16MB/140W) Processor Kit	686879-B21
	HP DL385p Gen8 AMD Opteron™ 6282SE (2.6GHz/16-core/16MB/140W) Processor Kit	654712-B21
	HP DL385p Gen8 AMD Opteron™ 6278 (2.4GHz/16-core/16MB/115W) Processor Kit	686881-B21
	HP DL385p Gen8 AMD Opteron™ 6276 (2.3GHz/16-core/16MB/115W) Processor Kit	654714-B21
	HP DL385p Gen8 AMD Opteron™ 6274 (2.2GHz/16-core/16MB/115W) Processor Kit	654716-B21
	HP DL385p Gen8 AMD Opteron™ 6272 (2.1GHz/16-core/16MB/115W) Processor Kit	654718-B21
	HP DL385p Gen8 AMD Opteron™ 6262HE (1.6GHz/16-core/16MB/85W) Processor Kit	654728-B21
	Twelve-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6348 (2.8GHz/12-core/16MB/115W) Processor Kit	703952-B21
	HP DL385p Gen8 AMD Opteron™ 6344 (2.6GHz/12-core/16MB/115W) Processor Kit	703954-B21
	HP DL385p Gen8 AMD Opteron™ 6238 (2.6GHz/12-core/16MB/115W) Processor Kit	654722-B21
	HP DL385p Gen8 AMD Opteron™ 6234 (2.4GHz/12-core/16MB/115W) Processor Kit	654724-B21
	Eight-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6328 (3.2GHz/8-core/16MB/115W) Processor Kit	703958-B21
	HP DL385p Gen8 AMD Opteron™ 6320 (2.8GHz/8-core/16MB/115W) Processor Kit	703960-B21
	HP DL385p Gen8 AMD Opteron™ 6220 (3.0GHz/8-core/16MB/115W) Processor Kit	654726-B21
	HP DL385p Gen8 AMD Opteron™ 6212 (2.6GHz/8-core/16MB/115W) Processor Kit	654720-B21
	Quad-Core Processors	
	HP DL385p Gen8 AMD Opteron™ 6308 (3.5GHz/4-core/16MB/115W) Processor Kit	703962-B21
	HP DL385p Gen8 AMD Opteron™ 6204 (3.3GHz/4-core/16MB/115W) Processor Kit **NOTE:** Up to 2 processors supported in all models. **NOTE:** DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed.	677551-B21

Core Options

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html (Worldwide)

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647871-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647877-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647883-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672633-B21

Load Reduced DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21

Ultra Low Voltage DIMMs (ULVDIMM)

HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647869-B21
HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647875-B21
HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647881-B21

NOTE: HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.
NOTE: If only one processor is installed, only half the DIMM slots are available.
NOTE: Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.
NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

HP Optical Drives

HP 12.7mm Slim SATA DVD-ROM JackBlack Optical Drive	652232-B21
HP 12.7mm Slim SATA DVD-RW JackBlack Optical Drive	652235-B21

NOTE: Not Available on 8+8 LFF, 12LFF or 25SFF Models.

HP Hard Drives

NOTE: The HP ProLiant DL385p Gen8 Smart Storage solutions are equipped with

entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status, location and activity indicators as well as caution indicators for "Do Not Remove".

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug with SmartDrive SFF (2.5-inch) Enterprise Drives	
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Dual Port Enterprise 3yr Warranty Hard Drive	718162-B21
HP 1.2TB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	697574-B21
HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
SAS Hot Plug SmartDrive SFF (2.5-inch) Midline Drives	
HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21
SAS Hot Plug SmartDrive LFF (3.5-inch) Enterprise Drives	
HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21
SAS Hot Plug SmartDrive LFF (3.5-inch) Midline Drives	
HP 4TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	695510-B21
HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html (Worldwide)

6G SATA Hot Plug with SmartDrive SFF (2.5-inch) Midline (MDL) Drives	
HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21
6G SATA Hot Plug with SmartDrive LFF (3.5-inch) Midline (MDL) Drives	
HP 4TB 6G SATA 7.2k rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	693687-B21
HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21

Core Options

HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html (Worldwide)	
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	717965-B21
HP 80GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734360-B21
6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Boot Solid State Drives	
HP 120GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	718171-B21
HP 80GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	734362-B21
6G SATA Value Endurance Hot Plug SFF (2.5-inch) Enterprise Value Solid State Drives	
HP 800GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717973-B21
HP 480GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717971-B21
HP 600GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	739898-B21
HP 300GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Boot 3yr Wty Solid State Drive	739888-B21
HP 240GB 6G SATA Value Endurance SFF 2.5-in SC Enterprise Value 3yr Wty Solid State Drive	717969-B21
6G SATA Value Endurance Hot Plug LFF (3.5-inch) Enterprise Value Solid State Drives	
HP 800GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718189-B21
HP 600GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	739900-B21
HP 480GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718183-B21
HP 300GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Boot 3yr Wty Solid State Drive	739890-B21
HP 240GB 6G SATA Value Endurance LFF 3.5-in SC Enterprise Value 3yr Wty Solid State Drive	718177-B21
6G SATA ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691868-B21
HP 400GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691866-B21
HP 200GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691864-B21

Core Options

HP 100GB 6G SATA Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691862-B21
6G SATA ME Hot Plug LFF (3.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691860-B21
HP 400GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691856-B21
HP 200GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691854-B21
HP 100GB 6G SATA Mainstream Endurance LFF 3.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	691852-B21
6G SAS ME Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
HP 800GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690829-B21
HP 400GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690827-B21
HP 200GB 6G SAS Mainstream Endurance SFF 2.5-in SC Enterprise Mainstream 3yr Wty Solid State Drive	690825-B21
6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives	
HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21
NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html (Worldwide)	
Hard Drive Kits	
NOTE: All Factory Integrated Models will be populated with sufficient hard drive blanks based on the number of initial hard drives ordered with the server.	
HP SFF Gen8 Hard Drive Blank Kit	666987-B21
HP LFF Gen8 Hard Drive Blank Kit	666986-B21
HP DL380/DL385 Gen8 8 Small Form Factor Hard Drive Backplane Cage Kit	662883-B21

Core Options

HP Networking	**Gigabit Server adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	HP Ethernet 1Gb 2-port 332T Adapter	615732-B21
	HP Ethernet 1Gb 2-port 361T Adapter	652497-B21
	10 Gigabit ServerAdapters **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately.	
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	HP FlexFabric 10Gb 2-port 526FLR-SFP+ Adapter	629138-B21
	HP Ethernet 10Gb 2-port 530SFP Adapter	652503-B21
	HP Ethernet 10Gb 2-port 530T Adapter	656596-B21
	HP FlexFabric 10Gb 2-port 533FLR-T Adapter	700759-B21
	HP FlexFabric 10Gb 2-port 534FLR-SFP+ Adapter	700751-B21
	HP Ethernet 10Gb 2-port 560SFP+ Adapter	665249-B21
	HP Ethernet 10Gb 2-port 561FLR-T Adapter	700699-B21
	HP Ethernet 10Gb 2-port 561T Adapter	716591-B21
	HP Ethernet 10Gb 2-port 570SFP+ Adapter	718904-B21
	FlexibleLOM Adapters	
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP Ethernet 1Gb 4-port 366FLR Adapter	665240-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
	HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter	665243-B21
	HP Ethernet 10Gb 2-port 570FLR-SFP+ Adapter	717491-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs	

Core Options

HP InfiniBand	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544QSFP Adapter	649281-B21
	NOTE: For the following two InfiniBand Adapters, only 1 FlexibleLOM can be added to the server, which is selected in Step 2 for the "Configuration Information - Factory Integrated Models" section. These two options are for upgrade or change from original configuration.	
	HP Infiniband FDR/Ethernet 10Gb/40Gb 2-port 544FLR-QSFP Adapter	649282-B21
	HP Infiniband QDR/Ethernet 10Gb 2-port 544FLR-QSFP Adapter	649283-B21
	NOTE: FLR Indicates new HP FlexibleLOM Adapter series.	
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html	
HP I/O Expansion Options	HP DL385p Gen8 x16 2x8 PCI-E Riser Kit	653214-B21
	NOTE: 2nd Riser Cage requires 2nd Processor.	
HP Power Supplies	**NOTE:** Mixing of power supplies in the same server is not supported. All power supplies inside a server must be exactly the same model. Mixing Gold, Platinum, and Platinum Plus certified power supplies is not supported.	
	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits	
	NOTE: The following Power Supplies offer 94% Efficiency with support for Intelligent Power Discovery.	
	HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
	HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HP Common Slot Gold Power Supplies	
	NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP Common Slot -48VDC Power Supplies	
	NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
	NOTE: The HP 750W Common Slot -48VDC power supply does not ship with a power cable. It has been designed with a terminal block connection allowing for custom design of power cords by the user.	
	NOTE: Option Kits contain optional power supply, an IEC power cable and PDU IEC cables.	
	NOTE: HP ProLiant servers ship with an IEC-IEC power cord used for rack mounting with Power Distribution Units (PDUs). For a full list of optional HP power cords please go to www.hp.com/products/powercords	
	NOTE: Power Specification and Technical Content for supported power supplies can be	

Core Options

found at:
http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Additional Options

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	**HP Insight Control**	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	C6N27A
	HP Insight Control Server Provisioning Media Kit	BD883A
	HP Insight Management Media Kit	C6N31A
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License	452151-B21
	NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. **NOTE:** Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. **NOTE:** Licenses ship without media. The HP Insight Control Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates.	
	NOTE: For additional license options please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	
	HP Integrated Lights-Out (iLO) Advanced for ProLiant	
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	NOTE: For additional license options please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/14276_na/14276_na.html	
	NOTE: For more information, visit: http://www.hp.com/go/ilo	
Converged Infrastructure Management Software	**HP OneView**	
	HP OneView with iLO Advanced	
	HP OneView Media Kit Phys No Lic	E5Y37A
	HP OneView incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y34A
	HP OneView incl 3yr 24x7 Supp Flex Qty E-LTU	E5Y35AAE
	HP OneView without iLO Advanced	
	HP OneView w/o iLO Adv incl 3yr 24x7 Supp Phys 1 Svr Lic	E5Y38A
	HP OneView w/o iLO Adv inc 3yr 24x7 Supp Flex Qty E-LTU	E5Y39AAE
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14621_na/14621_na.html	

Additional Options

High Performance Clusters	**HP Cluster Management Utility**	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License	BD476A
	NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	
	HP Insight Cluster Management Utility Media	BD477A
	NOTE: For additional license kits please see the QuickSpecs at: http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html	
HP I/O Accelerator Options	**Second Generation Accelerators**	
	HP 365GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673642-B21
	HP 785GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673644-B21
	HP 1205GB Multi Level Cell G2 PCIe ioDrive2 for ProLiant Servers	673646-B21
	HP 2410GB Multi Level Cell G2 PCIe ioDrive2 Duo for ProLiant Servers	673648-B21
	HP 3TB G2 FH/HL PCIe ioDrive2 IO Accelerator for ProLiant Servers	721458-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_na/13587_na.html	
HP PCIe Workload Accelerator Options	**Mainstream Endurance (ME) PCIe Workload Accelerators**	
	HP 1.4TB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator	729307-B21
	HP 700GB HH/HL Mainstream Endurance (ME) PCIe Workload Accelerator	729305-B21
	High Endurance (HE) PCIe Workload Accelerators	
	HP 700GB HH/HL High Endurance (HE) PCIe Workload Accelerator	708090-B21
	HP 350GB HH/HL High Endurance (HE) PCIe Workload Accelerator	708088-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14528_na/14528_na.html	

Additional Options

HP Security	HP Trusted Platform Module Option **NOTE:** The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM. **NOTE:** ProLiant OS pre-installed units will come with the partition required for TPM deployment. **NOTE:** The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	488069-B21
	HP 2U Security Bezel Kit	666988-B21
HP Storage Controllers	**SAS Controllers**	
	Smart Array P222 Controller	
	HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
	Smart Array P420 Controller	
	HP Smart Array P420/1GB FBWC 6Gb 2-ports Int SAS Controller	631670-B21
	HP Smart Array P420/2GB FBWC 6Gb 2-ports Int SAS Controller	631671-B21
	Smart Array P421 Controller	
	HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller	631673-B21
	HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller	631674-B21
	Smart Array P430 Controller	
	HP Smart Array P430/2GB FBWC 6Gb 1-port Int SAS Controller	698529-B21
	Smart Array P431 Controller	
	HP Smart Array P431/2GB FBWC 6Gb 2-ports Ext SAS Controller	698531-B21
	Smart Array P822 Controller	
	HP Smart Array P822/2GB FBWC 2-ports Int/4-ports Ext SAS Controller	615418-B21
	Optional Upgrades	
	HP 1GB P-series Smart Array Flash Backed Write Cache	631679-B21
	HP 2GB P-series Smart Array Flash Backed Write Cache	631681-B21
	HP 512MB P-series Smart Array Flash Backed Write Cache	661069-B21
	HP SmartCache No Media 24x7 Technical Support 1 Svr License	D7S26A
	HP SmartCache No Media 24x7 Technical Support Flexible License	D7S27A
	HP SmartCache No Media 24x7 Technical Support Electronic License	D7S27AAE
	HP Cable Options	
	HP Mini SAS Straight to Straight 37in Cable Assembly	662897-B21
	HP DL38x/DL360 Gen8 Embedded SATA Cable Kit	664009-B21
	HP Mini SAS/Straight to Straight 25 SFF Bypass Cable Assembly	726974-B21

Additional Options

HP Mini SAS/Straight to Straight Offset Bypass Cable Assembly	697611-B21
HP Mini SAS/Straight to Straight Short Bypass Cable Assembly	697691-B21
HP DL38Xp Gen8 8 Large Form Factor (LFF) P430/830 Cable Kit	729270-B21
HP DL38Xp Gen8 12 Large Form Factor (LFF) P430/830 Cable Kit	729272-B21
HP DL38Xp Gen8 25 Small Form Factor (SFF) P430/830 Cable Kit	729274-B21
HP 6G SAS P430/830 Secondary Cable Kit	729276-B21
HP 6G SAS P430/830 Primary Cable Kit	729278-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14227_na/14227_na.html (Smart Array P222 Controller)
http://h18000.www1.hp.com/products/quickspecs/14228_na/14228_na.html (Smart Array P420 Controller)
http://h18000.www1.hp.com/products/quickspecs/14229_na/14229_na.html (Smart Array P421 Controller)
http://h18000.www1.hp.com/products/quickspecs/14624_na/14624_na.html (Smart Array P430 Controller)
http://h18000.www1.hp.com/products/quickspecs/14625_na/14625_na.html (Smart Array P431 Controller)

Host Bus Adapter

HP H220 Host Bus Adapter	650933-B21
HP H221 Host Bus Adapter	650931-B21
HP H221 PCIe 3.0 SAS Host Bus Adapter	729552-B21
HP H222 Host Bus Adapter	650926-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/14336_na/14336_na.html (HBA 220)
http://h18004.www1.hp.com/products/quickspecs/14222_na/14222_na.html (HBA 221)
http://h18004.www1.hp.com/products/quickspecs/14337_na/14337_na.html (HBA 222)

SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21

NOTE: Please see the following QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SC11Xe HBA)

Additional Options

HP Tape Backup	**NOTE:** For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK **NOTE:** For Internal drives to be connected to DL servers please make sure that you order rack mount kit as well.	
	HP StoreEver DAT 160 SCSI External Tape Drive	Q1574B
	HP StoreEver LTO-4 Ultrium 1760 SCSI External Tape Drive	EH922B
	HP StoreEver LTO-5 Ultrium 3000 SAS External Tape Drive	EH958B
	HP StoreEver LTO-6 Ultrium 6250 Tape Drive in 1U Rack-mount Kit	C0L99A
	HP StoreEver LTO-6 Ultrium 6650 External Tape Drive	EH964A
	HP StoreEver LTO-6 Ultrium 6250 External Tape Drive	EH970A
	HP StoreEver 1/8 G2 LTO-6 Ultrium 6250 FC Tape Autoloader	C0H19A
HP Tape Storage Systems	**HP StoreEver MSL6480**	
	HP StoreEver MSL6480 Scalable Base Module	QU625A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14604_na/14604_na.html	
HP Disk Backup	**NOTE:** For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK.	
	HP RDX Removable Disk Backup System	
	HP RDX320 USB3.0 External Disk Backup System	B7B63A
	HP RDX500 USB3.0 Internal Disk Backup System	B7B64A
	HP RDX500 USB3.0 External Disk Backup System	B7B66A
	HP RDX1000 USB3.0 Internal Disk Backup System	B7B67A
	HP RDX1000 USB3.0 External Disk Backup System	B7B69A
	HP RDX Removable Disk Backup Systems USB	
	HP RDX1000 USB3.0 Gen8 DL Server Module	B7B70A
	NOTE: Please see the QuickSpecs for additional part numbers, Technical Specifications, and additional information: http://h18000.www1.hp.com/products/quickspecs/13036_na/13036_na.html	
HP Disk Storage Systems	**Disk Enclosures**	
	HP D2600 w/12 4TB 6G SAS 7.2K LFF Dual Port MDL HDD 48TB Bundle	E7W32A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13404_na/13404_na.html	

Additional Options

HP Storage Options	**Storage Fibre Channel HBA**	
	NOTE: For the complete listing of Fibre Channel Host Bus Adapters for Windows 2000, Windows Server 2003 and Linux, please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 81B 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AP769B
	HP 82B 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AP770B
	Emulex Fibre Channel HBAs	
	HP 81E 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AJ762B
	HP 82E 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ763B
	HP SN1000E 16Gb 1-port PCIe Fibre Channel Host Bus Adapter	QR558A
	HP SN1000E 16Gb 2-port PCIe Fibre Channel Host Bus Adapter	QR559A
	HP StoreFabric SN1100E 16Gb Single Port Fibre Channel Host Bus Adapter	C8R38A
	HP StoreFabric SN1100E 16Gb Dual Port Fibre Channel Host Bus Adapter	C8R39A
	QLogic Fibre Channel HBAs	
	HP 81Q 8Gb 1-port PCIe Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb 2-port PCIe Fibre Channel Host Bus Adapter	AJ764A
	HP StoreFabric SN1000Q 16GB 1-port PCIe Fibre Channel Host Bus Adapter	QW971A
	HP StoreFabric SN1000Q 16GB 2-port PCIe Fibre Channel Host Bus Adapter	QW972A
	Converged Network Adapter	
	HP CN1100E Dual Port Converged Network Adapter	BK835A
	HP CN1000Q Dual Port Converged Network Adapter	BS668A
	HP StoreFabric CN1100R Dual Port Converged Network Adapter	QW990A

HP Uninterruptible Power Systems	**HP Rack-mountable UPS**	
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_na/14059_na.html	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_na/14058_na.html	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_na/14109_na.html	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A

Additional Options

NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_na/14110_na.html

NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.

NOTE: For additional information on sizing your server, please reference: http://www.upssizer.com.

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

HP Basic Power Distribution Units (bPDU)	**HP Basic Power Distribution Unit: 1U/0U Version**	
	HP 1.9kVA 120 Volt 12 Outlet NA/JP Basic Power Distribution Unit	H5M54A
	HP 3.6kVA 200-240 Volt 12 Outlet WW Basic Power Distribution Unit	H5M56A
	HP Basic Power Distribution Unit: Half Height Version	
	HP 2.8kVA 120 Volt 18 Outlet NA/JP Basic Power Distribution Unit	H5M55A
	HP 3.6kVA 200-240 Volt 20 Outlet WW Basic Power Distribution Unit	H5M57A
	HP 4.9kVA 208 Volt 20 Outlet NA/JP Basic Power Distribution Unit	H5M58A
	HP 8.6kVA 208 Volt Three Phase 18 Outlet NA/JP Basic Power Distribution Unit	H5M61A
	HP Basic Power Distribution Unit: Mid Height Version	
	HP 4.9kVA 208 Volt 30 Outlet NA/JP Basic Power Distribution Unit	H5M59A
	HP 8.3kVA 208 Volt 36 Outlet NA/JP Basic Power Distribution Unit	H5M60A
	HP Hardwired 200-240 Volt 36 Outlet WW Basic Power Distribution Unit	H5M75A
	HP 5.7kVA 208 Volt Three Phase 27 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M63A
	HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Dual Voltage Basic Power Distribution Unit	H5M64A
	HP 8.6kVA 208 Volt Three Phase 30 Outlet NA/JP Basic Power Distribution Unit	H5M62A
	HP Basic Power Distribution Unit: Full Height Version	
	HP 11kVA 400 Volt Three Phase 42 Outlet NA Basic Power Distribution Unit	H5M67A
	HP Basic Power Distribution Unit: 480/277 Volt Version	
	HP 13.2kVA 480 Volt Three Phase 15 Outlet NA Basic Power Distribution Unit	H3X07A
	HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Basic Power Distribution Unit	H3X08A
	HP 800VA - 277V Input / 230V Output NA Rack Mount Transformer	H3X09A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14557_na/14557_na.html	
	NOTE: Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit www.hp.com/go/rackandpower	

Additional Options

HP Remote Monitoring Power Distribution Units (mPDU)	**HP Remote Monitored Power Distribution Unit: 1U Version**	
	HP 2.8kVA 120 Volt 12 Outlet NA/JP Monitored Power Distribution Unit	D9N43A
	HP 3.6kVA 200-240 Volt 12 Outlet WW Monitored Power Distribution Unit	D9N46A
	HP 4.9kVA 208 Volt 12 Outlet NA/JP Monitored Power Distribution Unit	D9N44A
	HP Remote Monitored Power Distribution Unit: Half Height Version	
	HP 3.6kVA 200-240 Volt 16 Outlet WW Monitored Power Distribution Unit	D9N45A
	HP Remote Monitored Power Distribution Unit: Mid Height Version	
	HP 4.9kVA 208 Volt 24 Outlet NA/JP Monitored Power Distribution Unit	D9N47A
	HP 8.6kVA 208 Volt Three Phase 21 Outlet NA/JP Monitored Power Distribution Unit	D9N51A
	HP 5.7kVA 208 Volt Three Phase 21 Outlet NA/JP Dual Voltage Monitored Power Distribution Unit	D9N52A
	HP 8.6kVA 208 Volt Three Phase 24 Outlet NA/JP Dual Voltage Monitored Power Distribution Unit	D9N53A
	HP Remote Monitored Power Distribution Unit: Full Height Version	
	HP 8.3kVA 208 Volt 33 Outlet NA Monitored Power Distribution Unit	D9N49A
	HP 14.4kVA 208 Volt Three Phase 24 Outlet NA Monitored Power Distribution Unit	D9N58A
	HP 16.6kVA 400 Volt Three Phase 33 Outlet NA Monitored Power Distribution Unit	D9N61A
	HP 17.3kVA 208 Volt Three Phase 27 Outlet NA/JP Monitored Power Distribution Unit	D9N54A
	HP 17.3kVA 208 Volt Three Phase 24 Outlet NA/JP Monitored Power Distribution Unit	D9N59A
	HP 16.6kVA 400 Volt Three Phase 24 Outlet NA Monitored Power Distribution Unit	D9N62A
	HP 19.9kVA 480 Volt Three Phase 30 Outlet NA Monitored Power Distribution Unit	D9N63A
	HP Environmental Sensor for Remote Monitored PDUs	
	HP Environmental Sensor for Remote Monitored PDUs	E2D53A
	HP Remote Monitored Power Distribution Unit: 1U Version	
	HP 2.8kVA 120 Volt 12 Outlet NA/JP Monitored Power Distribution Unit	D9N43A
	HP 3.6kVA 200-240 Volt 12 Outlet WW Monitored Power Distribution Unit	D9N46A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14669_na/14669_na.html	

Additional Options

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	iPDU Kits with Standard Extension Bars	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	iPDU Extension Bars	
	HP 5xC13 Intelligent PDU Extension Bar G2 Kit	AF547A
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13650_na/13650_na.html **NOTE:** Additional HP Power Distribution Units are available. For a complete list of all HP PDUs and additional information please visit: www.hp.com/go/rackandpower.	
HP Rack Series	**HP Intelligent Series Rack**	
	HP 636 1075mm Pallet Intelligent Series Rack	BW895A
	HP 636 1075mm Shock Intelligent Series Rack	BW896A
	HP 642 1075mm Pallet Intelligent Series Rack	BW903A
	HP 642 1075mm Shock Intelligent Series Rack	BW904A
	HP 647 1075mm Pallet Intelligent Series Rack	BW911A
	HP 647 1075mm Shock Intelligent Series Rack	BW912A
	NOTE: Please see the QuickSpecs for Technical Specifications such as height, width, depth, weight, and color: http://h18000.www1.hp.com/products/quickspecs/14223_na/14223_na.html **NOTE:** For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.	
HP Rack Options	**HP Location Discovery Services**	
	HP 36U Location Discovery Kit	BW945A
	HP 42U Location Discovery Kit	BW946A
	HP 47U Location Discovery Kit	BW947A

Additional Options

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/14429_na/14429_na.html

HP TFT7600 G2 KVM Console and Monitor (TFT7600 G2)

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13972_na/13972_na.html

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html

HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HP KVM CAT5 1-pack USB Interface Adapter	336047-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html

HP IP Console Switch G2 with Virtual Media & CAC

HP 1x4 USB/PS2 KVM Console Switch	AF611A
HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html

Rail Kits

NOTE: Rail kits are optional for Gen8 and are no longer included standard with the server(except pre-configured/BTO Models). The customer has the choice to not include rail kits with their server purchase, but it is recommended.

NOTE: HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.

NOTE: The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. To assist in the installation of the server into the rack an optional installation tool

Additional Options

	is available by contacting your local services representative (p/n 695539-001). **Caution:** HP recommends that a minimum of two people are required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	
	HP 2U Large Form Factor Ball Bearing Gen8 Rail Kit with CMA **NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.	663480-B21
	HP 2U Small Form Factor Ball Bearing Gen8 Rail Kit with CMA **NOTE:** HP 2U Ball Bearing Rail Kits provide full serviceability of the server while in the Rack and include a CMA. HP 2U Friction Rail Kits ARE NOT serviceable in the Rack and must be removed from the rack and do not include CMA.	663478-B21
HP USB and SD options	**HP Flash Media Kits for USB Drives**	
	HP 2GB USB Flash Media Drive Key Kit **NOTE:** HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21
	HP 8GB USB EM Flash Media Kit	737953-B21
	HP Enterprise Mainstream Flash Media Kits for Memory Cards	
	HP 8GB SD Enterprise Mainstream Flash Media Kit	726113-B21
	HP 32GB SD Enterprise Mainstream Flash Media Kit	700136-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13971_na/13971_na.html	
	Other USB and SD Options	
	HP USB 04 Standard Keyboard	DT528A#ABA

Additional Options

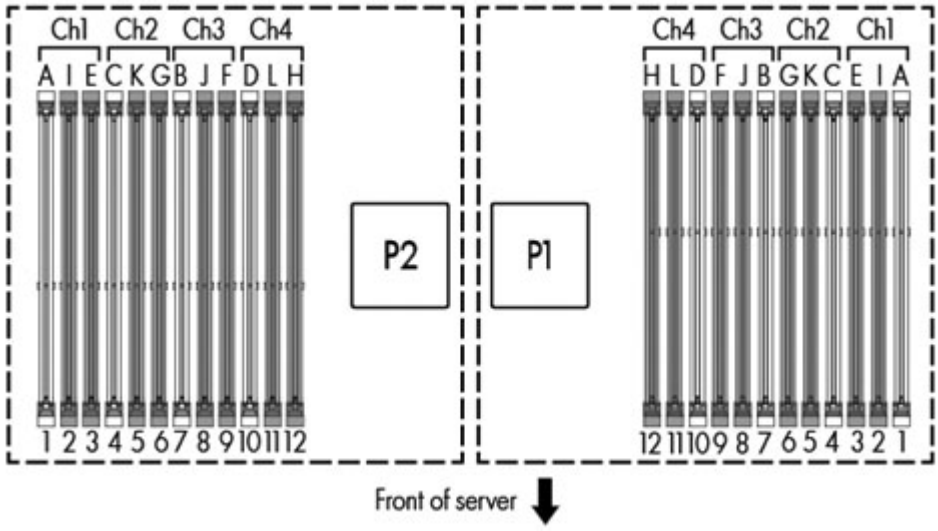
HP Care Pack Services	**Proactive Care**	
	NOTE: Collaborative Support plus Proactive services delivered by the onshore, local language Advanced Solution Center (ASC), end-to-end case ownership from a Technical Solution Specialists and Technical Account Manager who remotely delivers firmware/software revision management, proactive scans and incident trend reports. Recommended for customers running a virtualized infrastructure and/or customers who desire an enhanced call support experience.	
	HP 3 year 4 hour 24x7 ProLiant DL38x(p) Proactive Care Service	U2Z50E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL38x(p) Proactive Care Service	U2Z53E
	HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) Proactive Care Service	U2Z56E
	HP 3 year 6 hour Call To Repair 24x7 w/DefectiveMedia Retention ProLiant DL38x(p) Proactive Care SVC	U2Z59E
	HP 3 year Next business day ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N17E
	HP 3 year 4 hour 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N23E
	HP 3 year 4hr 24x7 with Defective Media Retention DL38x(p) with Insight Control Proactive Care SVC	U3N26E
	HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) with Insight Control Proactive Care Service	U3N29E
	HP 3yr 6hrCallToRepair 24x7w/Defective Media Retention DL38x(p) w/Insight Control Proactive Care SVC	U3N32E
	Collaborative Support	
	NOTE: Hardware break/fix plus 24x7 software diagnosis support with collaborative call management for a broad spectrum of 3rd Party software products including O/S and hypervisors. Recommended for customers procuring 3rd party SW O/S and hypervisors from the software vendors directly and deploying them on HP ProLiant servers.	
	HP 3 year 4 hour 24x7 ProLiant DL38x(p) Collaborative Support	U1J30E
	HP 3 year 4 hour 24x7 with Defective Media Retention ProLiant DL38x(p) Collaborative Support	U1J33E
	HP 3 year 6 hour Call To Repair 24x7 ProLiant DL38x(p) Collaborative Support	U1J36E
	HP 3 year 6hr Call To Repair 24x7 withDefective Media Retention ProLiant DL38x(p) Collaborative Supp	U1J39E
	Installation Services	
	NOTE: Reduce the time required to get your system up and running and help minimize disruptions to your business.	
	HP 3 year 4 hour 24x7 ProLiant DL380 Hardware Support Defective Media Retention	UD940E
	HP Install ProLiant DL38x(p) Service	U4554E
	HP Startup ProLiant DL38x(p) Service	U4555E
	NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack	

Memory

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool:
www.hp.com/go/ddr3memory-configurator

Memory Subsystem Architecture
Each AMD Opteron family processor socket contains four memory channels that support three DIMMs each for a total of twelve (12) DIMM per installed processor or a grand total of twenty-four (24) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 768GB of memory (24 DIMM slots x 32GB per DIMM).

Memory population guidelines



General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- Install DIMMs only if the corresponding processor is installed.
- If only one processor is installed in a two processor system, only half of the DIMM slots are available.
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible.
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage.
- RDIMMs and LRDIMMs are supported up to 3 DIMMs per channel.
- The DL385p Gen8 RBSU has options to set memory for Performance or Power modes. In Performance Mode all memory whether 1.35V DIMMs or 1.5V DIMMs will be set to 1.5V. In Power Mode all memory whether 1.35V or 1.5V will be set to 1.35V for power savings.
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed.
- The maximum memory speed is a function of the memory type and memory configuration.
- The maximum memory capacity is a function of the memory type and number of installed processors.
- HP memory from previous generation servers is not qualified on the DL385p Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html.
- For memory population rules and additional memory guidelines, please see the DL385p Gen8 user guide at http://www.hp.com/support.

Memory

DL385p Gen8 Supported Memory Bandwidth and Capacity							
DIMM Type	Registered DIMMS						Load Reduced (LRDIMMs)
DIMM Rank	Single Rank (1R)			Dual Rank (2R)			Quad Rank (4R)
DIMM Capacity	4GB	4GB	8GB	8GB	16GB	16GB	32GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1333	1600	1066
Voltage	LV/ULV	Std	Std	LV/ULV	LV/ULV	Std	LV
SLOTS THAT CAN BE POPULATED							
24 slot servers	24	24	24	24	24	24	24
MAXIMUM CAPACITY (GB)[1]							
24 slot servers	96	96	192	192	384	384	768
POPULATED DIMM SPEED (MHz)							
1 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333
2 DIMM Per Channel	1333	1600	1600	1333/1066[2]	1333/1066[2]	1600	1333
3 DIMM Per Channel	1066	1066	1066	1066/800[3]	1066/800[3]	1066	800[4]

[1] Maximum capacity will vary based on individual server platform.
[2] Ultra Low Voltage 8GB and 16GB dual rank operate at 1066MT/s speed in 2 DPC configurations.
[3] Ultra Low Voltage 8GB and 16GB dual rank operate at 800MT/s speed in 3 DPC configurations.
[4] LRDIMM capable of 3 DIMMs per channel.

DIMM slot and configuration diagram

Population order; start with "A" first, "B" second, "C" third, etc.
When one processor is installed, install DIMMs in sequential alphabetic order: A, B, C, D, E, F ...
When two processors are installed, install DIMMs in sequential
alphabetic order: CPU1-A, CPU2-A,CPU1-B,CPU2-B,CPU1-C, CP2-C

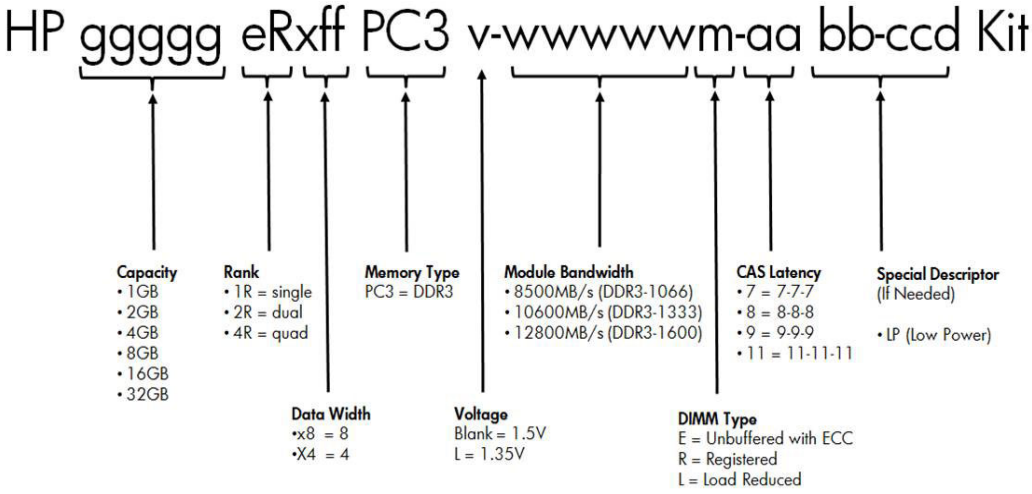
Memory

24 DIMM SLOTS (12 per CPU node)					
	slot #	population order	slot #	population order	
Chnl 1	1	A	1	A	Chnl 1
	2	I	2	I	
	3	E	3	E	
Chnl 2	4	C	4	C	Chnl 2
	5	K	5	K	
	6	G	6	G	
CPU1			**CPU2**		
Chnl 3	7	B	7	B	Chnl 3
	8	J	8	J	
	9	F	9	F	
Chnl 4	10	D	10	D	Chnl 4
	11	L	11	L	
	12	H	12	H	

NOTE: Capacity references are rounded to the common Gigabyte values.

- 1GB = 1024MB
- 2GB = 2048MB
- 4GB = 4096MB
- 8GB = 8192MB
- 16GB = 16384MB
- 32GB = 32768MB

DDR3 memory options part number decoder



Following are memory options available from HP:

HP Memory

NOTE: To realize the performance memory capabilities listed in this document, HP SmartMemory is recommended. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html (Worldwide)

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647871-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647873-B21
HP 8GB (1x8GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	695793-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647877-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647879-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647883-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672633-B21

Load Reduced DIMMs (LRDIMMs)

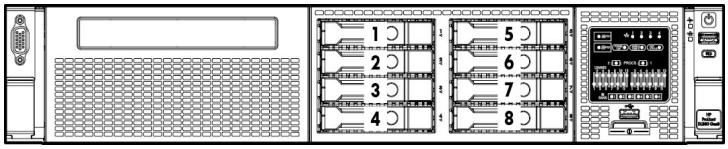
HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647885-B21

Ultra Low Voltage DIMMs (ULVDIMM)

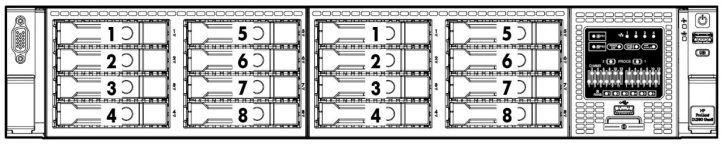
HP 4GB (1x4GB) Single Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647869-B21
HP 8GB (1x8GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647875-B21
HP 16GB (1x16GB) Dual Rank x4 PC3U-10600R (DDR3-1333) Registered CAS-9 Ultra Low Voltage Memory Kit	647881-B21

NOTE: HP memory from previous generation servers may not provide the same performance with the HP ProLiant DL385p Gen8 Servers as HP SmartMemory will.
NOTE: If only one processor is installed, only half the DIMM slots are available.
NOTE: Depending on the memory configuration, the memory speed may run at 1600MHz, 1333MHz, 1066MHz or lower. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.
NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

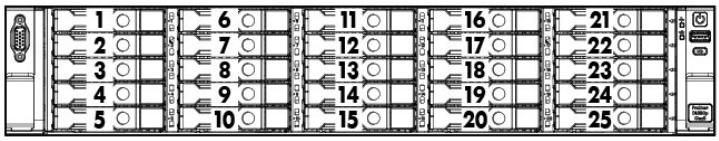
Storage



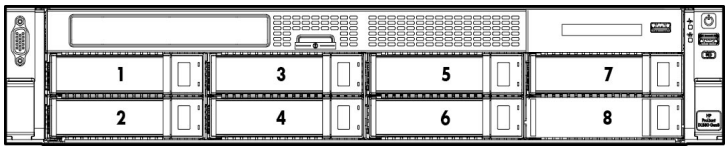
1-8 Eight SFF SAS hot plug drive bays



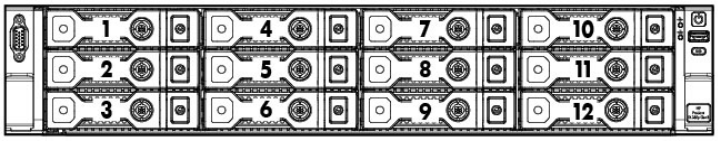
1-8, 1-8 Sixteen SFF SAS hot plug drive bays. Built-In Smart Array manages first 8 drives. Requires 2nd Smart Array Controller for second option of 8 drives.
NOTE: This configuration does not support optical drive.



1-25 Twenty Five SFF SAS hot plug drive bays
NOTE: This configuration does not support SID or optical drive.



1-8 Eight LFF SAS hot plug drive bays.
NOTE: This configuration supports a pop-out SID.



1-12 Twelve LFF SAS hot plug drive bays
NOTE: This configuration does not support SID or optical drive.

Maximum Storage Capacity - (SAS/SATA HDD)

Internal	48TB (12 x 4TB SATA LFF with twelve LFF drive bays)
External	200TB (200 x 1TB SAS SFF)
Total	248TB

Technical Specifications

System Unit	**Dimensions** (H x W x D) (with bezel)	SFF Drives: 3.44 x 17.54 x 27.50 in (8.73 x 44.55 x 69.85 cm)	
		LFF Drives: 3.44 x 17.54 x 29.50 in (8.73 x 44.55 x 74.93 cm)	
	Weight (approximate)	Maximum (all LFF hard drives, power supply, and processor installed)	61.00 lb (27.66 kg)
		Minimum (one SFF hard drive, power supply, and processor installed, ODD not installed)	41.0 lb (18.59 kg)
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC 200 to 240 VAC
		Rated Input Current	For 1200 W Power Supply: 10 A (at 100 VAC), 4.9 A (at 200 VAC) For 750 W Power Supply: 8.9 A (at 100 VAC), 4.3 A (at 200 VAC) For 460 W Power Supply: 5.5 A (at 100 VAC), 2.6 A (at 200 VAC)
		Rated Input Frequency	50 to 60 Hz
		Rated Input Power	For 1200 W Power Supply: 930 W (at 100 VAC), 1348 W (at 200 VAC) For 750 W Power Supply: 857 W (at 100 VAC), 824 W (at 200 VAC) For 460 W Power Supply: 526 W (at 100 VAC), 505 W (at 200 VAC)
	BTU Rating	Maximum	For 1200 W Power Supply: 3530 BTU/hr (at 100 VAC), 4600 BTU/hr (at 200 VAC) For 750 W Power Supply: 2925 BTU/hr (at 100 VAC), 2812 BTU/hr (at 200 VAC) For 460 W Power Supply: 1794 BTU/hr (at 100 VAC), 1725 BTU/hr (at 200 VAC)
	Power Supply Output (per power supply)	Rated Steady-State Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)

		For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
	Maximum Peak Power	For 1200 W Power Supply: 800 W (at 100 VAC), 900 W (at 120 VAC), 1200 W (at 200 to 240 VAC) For 750 W Power Supply: 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC) For 460 W Power Supply: 460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC)
System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 304.8 m (1.8°F per every 1000 ft) above sea level to a maximum of 3048 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).
	Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).
Relative Humidity (non-condensing)	Operating	10% to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.
	Non-operating	5% to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.
Altitude	Operating	3048 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
Acoustic Noise	Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109). The listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels. **NOTE:** The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.	
	Idle	
	LWAd	5.5 B
	LpAm	37 dBA
	Operating	

		LWAd	5.5 B
		LpAm	37 dBA
	Emissions Classification (EMC)	FCC Rating	Class A
		Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.
NOTE: The Listed sound levels apply to standard shipping configurations. Additional options may result in increased sound levels.

HP Smart Array P420i Controller	**Dimensions**	Embedded
	Disk Drive and Enclosure Interface - Transfer Rate	6Gb/s SAS (Serial Attached SCSI) 3Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	DDR2-800MHz with 40 or 72-bit wide bus
	Server Interface	x4 PCIe 2.0 provides 2GB/s maximum bandwidth
	SAS Speed	(8) 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 256MB ECC protected cache (battery upgrade available) 72-bit 512MB BBWC or 72-bit 512MB and 1G FBWC Zero Memory, Up to 2 logical volumes (8 physical drives)
	Logical Drives Supported	Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 60 (Advanced Data Guarding) RAID 5, 50 (Distributed Data Guarding) **NOTE:** A minimum of 512 MB cache is required to enable RAID 5, 50, 6, 60 **NOTE:** HP Smart Array Advanced Pack (SAAP 2.0) is no longer required to enable RAID 6 & 60 (Advanced Data Guarding). However, controller must be in firmware version 4.68 (or later). RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)

Technical Specifications

HP Ethernet 1Gb 4-port 331FLR Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	EEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 802.3ad 1000Base-TX	
		IEEE 802.1p 100Base-TX	
		IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Number of Ports	4	
	Controller	BCM5719	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s per port, 40 Mb/s Combined
		10Base-T (Full-Duplex)	20 Mb/s per port, 80 Mb/s Combined
		100Base-TX (Half-Duplex)	100 Mb/s per port, 400 Mb/s Combined
		100Base-TX (Full-Duplex)	200 Mb/s per port, 800 Mb/s Combined
		1000Base-TX (Half Duplex)	1000Mb/s per port, 4000 Mb/s Combined
		1000Base-TX (Full Duplex)	2000Mb/s per port, 8000 Mb/s Combined
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		10/100/1000Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	**Network Interface**	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	EEE 802.3 10Base-T	
		IEEE 802.3ab 1000Base-T	
		IEEE 802.3u 100Base-TX	
		IEEE 802.3ad 1000Base-TX	
		IEEE 802.1p 100Base-TX	
		IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Controller	BCM57810S	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	Two SFP+	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)

		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)
Environment-friendly Products and Approach	**End-of-life Management and Recycling**	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.	

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.